

**What is claimed is:**

1. An apparatus having an execution unit for executing a machine language, compiling a source  
5 program into a machine language directly executable by the execution unit, and executing the machine language in a just-in-time-compiler system, comprising:
  - a storage unit storing for each function a  
10 machine language executable by the execution unit obtained by compiling a function described in the source program, and maintaining stored data although a power supply voltage has dropped;
  - a compiling unit compiling the source program  
15 into a machine language executable by the execution unit;
  - a storage control unit storing the machine language compiled by said compiling unit;
  - a determination unit determining whether or  
20 not a machine language obtained by compiling a function used in the source program is stored in said storage unit; and
  - an execution control unit instructing the execution unit to directly execute either a machine  
25 language compiled by said compiling unit or a

machine language stored in said storage unit depending on a determination result obtained by said determination unit.

5     2.     The apparatus according to claim 1, wherein  
          said storage unit stores in advance a machine  
          language obtained by compiling a function which can  
          be used in the source program.

10    3.     The apparatus according to claim 1, further  
          comprising

          semiconductor memory copying and storing data  
          stored in said storage unit, wherein

          said execution control unit instructs the  
15    execution unit to execute a machine language copied  
          from the data stored in said storage unit and  
          stored in said semiconductor memory instead of  
          instructing the execution unit to execute a machine  
          language stored in said storage unit.

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4.     The apparatus according to claim 1, wherein  
          said source program is described in Java byte  
          code.

25    5.     An apparatus having an execution unit for

executing a machine language, compiling a source program into a machine language directly executable by the execution unit, and executing the machine language in a just-in-time-compiler system,

5 comprising:

a storage unit storing for each function a machine language executable by the execution unit obtained by compiling a function described in the source program, and maintaining stored data after  
10 the source program has been executed;

a compiling unit compiling the source program into a machine language executable by the execution unit;

a storage control unit storing the machine  
15 language compiled by said compiling unit corresponding to update date and time of the source program compiled by said compiling unit;

a determination unit determining whether or not the update date and time of the source program  
20 matches an update date and time corresponding to the machine language stored in said storage unit; and

an execution control unit instructing the execution unit to directly execute either a machine  
25 language compiled by said compiling unit or a

machine language stored in said storage unit depending on a determination result obtained by said determination unit.

- 5 6. The apparatus according to claim 5, further comprising

a read unit reading a program file storing the source program, wherein

- 10 said storage control unit stores the machine language in said storage unit by assuming that the update date and time of the program file indicated in the program file is the update date and time of the source program corresponding to the machine language; and

- 15 said determination unit determines whether or not the update date and time of the program file indicated in the program file matches the update date and time stored in said storage unit corresponding the machine language.

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7. The apparatus according to claim 5, wherein said source program is described in Java byte code.

- 25 8. An apparatus having execution means for

executing a machine language, compiling a source  
program into a machine language directly executable  
by said execution means, and executing the machine  
language in a just-in-time-compiler system,  
5 comprising:

storage means for storing for each function a  
machine language executable by the execution means  
obtained by compiling a function described in the  
source program, and maintaining stored data  
10 although a power supply voltage has dropped;

compiling means for compiling the source  
program into a machine language executable by the  
execution means;

storage control means for storing the machine  
15 language compiled by said compiling means;

determination means for determining whether or  
not a machine language obtained by compiling a  
function used in the source program is stored in  
said storage means; and

20 execution control means for instructing the  
execution means to directly execute either a  
machine language compiled by said compiling means  
or a machine language stored in said storage means  
depending on a determination result obtained by  
25 said determination means.

9. An apparatus having execution means for  
executing a machine language, compiling a source  
program into a machine language directly executable  
5 by the execution means, and executing the machine  
language in a just-in-time-compiler system,  
comprising:

storage means for storing for each function a  
machine language executable by the execution means  
10 obtained by compiling a function described in the  
source program, and maintaining stored data after  
the source program has been executed;

compiling means for compiling the source  
program into a machine language executable by the  
15 execution means;

storage control means for storing the machine  
language compiled by said compiling means  
corresponding to update date and time of the source  
program compiled by said compiling means;

20 determination means for determining whether or  
not the update date and time of the source program  
matches an update date and time corresponding to  
the machine language stored in said storage means;  
and

25 execution control means instructing the

execution means to directly execute either a machine language compiled by said compiling means or a machine language stored in said storage means depending on a determination result obtained by  
5 said determination means.

10. A method for executing a program based on a just-in-time-compiler system for compiling a source program into a machine language directly executable  
10 on a platform of a specific processing system, and executing the machine language, comprising:

storing in a storage unit, which maintains stored data although a supply voltage has dropped, the machine language obtained by compiling the  
15 source program for each function expressed in the source program;

determining whether or not the machine language obtained by compiling the function described in the source program is stored in the  
20 storage unit; and

setting either the machine language obtained by compiling the source program or the machine language stored in the storage unit to be directly executed on a platform of a specific processing  
25 system based on a determination result.

11. A method for executing a program based on a just-in-time-compiler system for compiling a source program into a machine language directly executable  
5 on a platform of a specific processing system, and executing the machine language, comprising:

storing the machine language obtained by compiling the source program for each function described in the source program corresponding to an  
10 update date and time of the source program before compiled into a machine language;

determining whether or not the date and time of the update of the source program matches an update date and time corresponding to the stored  
15 machine language; and

setting either the machine language obtained by compiling the source program or the machine language stored in the storage unit to be directly executed on a platform of a specific processing  
20 system based on a determination result.

12. A computer-readable storage medium storing a computer program used to direct a computer based on a just-in-time-compiler system to compile a source  
25 program into a machine language directly executable



on a platform of a specific processing system, and execute the machine language, comprising:

storing in a storage unit, which maintains stored data although a supply voltage has dropped,  
5 the machine language obtained by compiling the source program for each function expressed in the source program;

determining whether or not the machine language obtained by compiling the function  
10 described in the source program is stored in the storage unit; and

setting either the machine language obtained by compiling the source program or the machine language stored in the storage unit to be directly  
15 executed on a platform of a specific processing system based on a determination result.

13. A computer-readable storage medium storing a computer program used to direct a computer based on  
20 a just-in-time-compiler system to compile a source program into a machine language directly executable on a platform of a specific processing system, and execute the machine language, comprising:

storing the machine language obtained by  
25 compiling the source program for each function

described in the source program corresponding to an update date and time of the source program before compiled into a machine language;

determining whether or not the date and time  
5 of the update of the source program matches an update date and time corresponding to the stored machine language; and

setting either the machine language obtained by compiling the source program or the machine  
10 language stored in the storage unit to be directly executed on a platform of a specific processing system based on a determination result.

14. A computer program embodied on a transmission  
15 medium used to direct a computer based on a just-in-time-compiler system to compile a source program into a machine language directly executable on a platform of a specific processing system, and execute the machine language, comprising:

20 storing in a storage unit, which maintains stored data although a supply voltage has dropped, the machine language obtained by compiling the source program for each function expressed in the source program;

25 determining whether or not the machine

language obtained by compiling the function described in the source program is stored in the storage unit; and

5        setting either the machine language obtained by compiling the source program or the machine language stored in the storage unit to be directly executed on a platform of a specific processing system based on a determination result.

10    15.    A computer program embodied on a transmission medium used to direct a computer based on a just-in-time-compiler system to compile a source program into a machine language directly executable on a platform of a specific processing system, and  
15    execute the machine language, comprising:

      storing the machine language obtained by compiling the source program for each function described in the source program corresponding to an update date and time of the source program before  
20    compiled into a machine language;

      determining whether or not the date and time of the update of the source program matches an update date and time corresponding to the stored machine language; and

25        setting either the machine language obtained

by compiling the source program or the machine language stored in the storage unit to be directly executed on a platform of a specific processing system based on a determination result.

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16. A computer data signal embodied in a carrier wave containing a computer program used to direct a computer based on a just-in-time-compiler system to compile a source program into a machine language  
10 directly executable on a platform of a specific processing system, and execute the machine language, said computer program comprising:

storing in a storage unit, which maintains stored data although a supply voltage has dropped,  
15 the machine language obtained by compiling the source program for each function expressed in the source program;

determining whether or not the machine language obtained by compiling the function  
20 described in the source program is stored in the storage unit; and

setting either the machine language obtained by compiling the source program or the machine language stored in the storage unit to be directly  
25 executed on a platform of a specific processing

system based on a determination result.

17. A computer data signal embodied in a carrier wave containing a computer program used to direct a computer based on a just-in-time-compiler system to compile a source program into a machine language directly executable on a platform of a specific processing system, and execute the machine language, said computer program comprising:
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- 10 storing the machine language obtained by compiling the source program for each function described in the source program corresponding to an update date and time of the source program before compiled into a machine language;
- 15 determining whether or not the date and time of the update of the source program matches an update date and time corresponding to the stored machine language; and
- 20 setting either the machine language obtained by compiling the source program or the machine language stored in the storage unit to be directly executed on a platform of a specific processing system based on a determination result.